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ABSTRACT

High school academies are three-year schools-within-schools offering economically disadvantaged students an integrated academic-vocational education, career development and enrichment activities, and nonacademic supports and employment opportunities. The academies represent a many-faceted approach to linking business and industry with schools, involving a successful combination of school-based changes and outside interventions that is sustained over time. Evaluation of programs in Philadelphia (Pennsylvania), California, Portland (Oregon), and Pittsburgh (Pennsylvania) found that the chief considerations for program success are site selection, industry focus, and lead time for program development. The experience of newer academies indicates that attention to the following features during replication is also critical: (1) strict adherence to the academy model; (2) a defined student selection process; (3) an integrated academic-technical program; (4) strong private sector support; (5) a strong career planning component; (6) a full range of student support services; (7) a high degree of commitment from the school district; and (8) identifiable space dedicated solely to the academy. Technical assistance in organization, curriculum development, private sector involvement, and public relations is strongly recommended. The following materials are appended: (1) a 16-item bibliography; (2) a list of essential replication tasks; (3) a directory of academy contact people; and (4) a list of the academies. (FMW)

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Acknowledgments

The Academy for Educational Development (AED) produced *Partnerships for Learning: School Completion and Employment Preparation in the High School Academies* as part of its High School Academies Dissemination Project. This source book is the result of the work and support of many educators, evaluators, advocates, business people, and funders who generously shared with us their experiences with high school academies. AED Senior Consultant Elayne Archer is the primary author of the source book; with Sandy Weinbaum and myself, she collected and reviewed numerous reports and evaluations; organized an October 1988 seminar for academy practitioners; interviewed people involved in the academies, and created a document that will be useful to many others interested in learning about or starting academies.

The Edna McConnell Clark Foundation has supported the Dissemination Project with a generous grant. M. Hayes Mizell, the director of the foundation's Program for Disadvantaged Youth, first identified the need for such dissemination and, with AED Senior Vice President Sharon Franz, established the project.

The initiative appealed to us because the goals of the academies are in keeping with one of AED's major goals: to improve access to education and employment for economically disadvantaged young people. As long-term partnerships of schools, businesses, and other agencies, the academies have effectively linked academic course work and employment preparation and have helped students make a successful transition to post-secondary education and work. For these reasons, AED wanted to encourage other educators, youth advocates, and business representatives to consider academy programs in their efforts to serve all students.

The participants of AED's October 1988 seminar on the academies were especially helpful in clarifying issues and practices from the point of view of teachers, evaluators, community agency partners, and business representatives, and in reviewing drafts of the source book. They were: Eu-

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AED colleagues also contributed to the production of the source book. Sandy Weinbaum worked with us to design it and to organize and conduct the October seminar. She, Sharon Franz, and Frances Hayes also reviewed various drafts. Michelle Sajous assisted in every aspect of the project and shepherded the source book through all phases of production.

Susan Blank provided valuable editorial assistance, and Waldon Press, Inc. was responsible for typesetting and printing.

Patrick Montesano
Senior Program Officer and Director
High School Academies Dissemination Project
Academy for Educational Development

Foreword

In the 1980s, the Edna McConnell Clark Foundation supported the development of high school academies in several cities. Based on that experience, the foundation believes that academies are effective models for helping students make a successful transition from school to postsecondary education and/or work. Local school systems have also found the academies to be effective models for preventing dropouts and preparing at-risk students for future employment.

The high school academies first emerged in response to growing national concerns about youth, education and employment. Chief among these was concern over high dropout rates, estimated at 27 percent nationwide and as high as 50 percent in many urban school systems. Another concern focused on the increasingly inadequate preparation of young people for the workplace. Employers cite poor academic preparation as a major problem. Students have inadequate skills not only in writing, reading and math, but also in oral communication, problem-solving, and "knowing how to learn." These skills are highly valued in an economy increasingly dominated by service industries and emerging technologies.

These two issues — high dropout rates, especially among economically disadvantaged youth, and the inadequate preparation of young people entering the labor force — have led to high rates of unemployment, especially among poor youth, and a serious shortage of entry-level workers in many areas of the country.

These problems were epitomized in the Sequoia Union High School District, a district serving Silicon Valley, southeast of San Francisco, where two academies were established in the early 1980's. The area was a study in contrasts, with enormous gaps in income and educational levels between populations of neighboring cities. While some segments of the population had clearly benefited from the "Silicon Valley miracle," others had not. Further, while it was estimated that the area had over 15,000 available jobs, vocational educational programs in the district were underutilized,

especially by poor youth. Chief among the reasons for this was the perception among youth and their families that vocational education programs did not lead to jobs with a future.

The high school academies in the Sequoia Union School District and elsewhere were developed to address such social and economic inequities. First, the academies provide an environment and a curriculum that appeal to and retain youth who are considered at risk of dropping out. Second, they prepare youth adequately and appropriately for jobs that exist in the community, so that a graduate can expect to finish school with marketable skills — honed both in school and in actual work experiences. While these are seemingly simple goals, meeting them entails a major restructuring of part of a school program, recruiting and training of faculty, and a close linkage with local business and industry.

While the Edna McConnell Clark Foundation is no longer supporting high school academies or school-to-work transition programs, it has supported the Academy for Educational Development's High School Academies Dissemination Project, including the development of this source book. It has provided this support in the hope that other communities and school districts, in their efforts to help disadvantaged youth stay in school and become productive members of society, can benefit from the experiences of the high school academies.

M. Hayes Mizell
Director
Program for Disadvantaged Youth
The Edna McConnell Clark Foundation

Background

It's an old-fashioned approach to a contemporary problem [school dropout]. It's the little red school house with a few students, whom the teacher gets to know well. She has time to communicate with them and to get involved with their families. The students finally feel important. The big difference is the industry link-up. — lead teacher

Regular school is going to get you a diploma but it's not going to get you a future, whereas at the academy they're working towards both. — academy student

The high school academies are three-year schools-within-schools, offering economically disadvantaged students an integrated academic-vocational education, career development and enrichment activities, extensive academic and non-academic supports and employment opportunities. They are the joint efforts of school districts, local business and industry and an intermediary agency — usually community-based — such as the Urban League, the Urban Coalition, or a business coalition concerned with at-risk youth. The target population is economically disadvantaged students, alienated from the educational process — students with potential but also at risk of dropping out. The academies make the educational experience of these students more relevant by linking course work to employment opportunities in a local business or industry and help students make a successful transition to work or postsecondary education.

The first academies were established in Philadelphia in the late 1960s. The first was the Academy of Applied and Electrical Science, established in 1969 under the auspices of the school system, the Philadelphia Urban Coalition, and various local industries, including Bell of Pennsylvania Telephone Company and the Philadelphia Electrical Company. Since then, eleven more academies in six fields — automotive and mechanical science, business, applied electrical science, horticulture, environmental sci-

ence and health — have been established in Philadelphia with a total enrollment of 1,350 and graduating approximately 660 annually.[1]

Four more academies — the joint efforts of schools, industry and intermediary agencies — were established in the early to mid-1980s. The Peninsula Academies of Computers and Electronics in California, modeled on the academies in Philadelphia, were established in 1981 in Menlo-Atherton and Redwood City to help close the large gap between the many employment opportunities in Silicon Valley industries and the inability of existing vocational programs to provide skilled graduates to fill these jobs. These academies were the joint efforts of the Sequoia Union High School District, the Stanford Mid-Peninsula Urban Coalition, and representatives of numerous Silicon Valley industries. Modeled on the Peninsula Academies, the Business and Finance Academy in Westinghouse High School in Pittsburgh and the Financial Services Academy in Jefferson High School in Portland, Oregon, were established in 1984 and 1985 by the school system, Urban League affiliates, and local businesses to prepare students for jobs in the financial services industry, which was expanding in both cities as heavy industry declined. In California, the academy model has been replicated in a number of schools, with eighteen academies now in operation, four more planned for 1989-90, and a proposed total of thirty-three in the fall of 1990, offering programs in a variety of vocational fields: business, health, computers, electronics and building trades.

Private funding has been crucial to establishing the academies. Several foundations provided initial funding for the Peninsula Academies; and the Edna McConnell Clark Foundation provided initial funding for the academies in Pittsburgh and Portland, as well as support for the Peninsula Academies for three years. In California, the newer academies have been funded by the state.

Evaluation: Do Academies Work?

Before the academy I thought, What can I do? I just come from a little family living in a little section, but I discovered anybody anywhere can do anything. I found out there are jobs that can be fun if you go out and get your education — you can pick what you want to do. — academy student

The academy is handing me my future on a silver platter and I am going to take it. Our goal is success. Soon we will see how we handle it and I think I already know: we're going to do it with style, pride and a don't-stop-me-now attitude. We will succeed. — academy valedictorian

The Peninsula Academies Program exemplifies what business, government, labor, education and community organizations can do when they join in partnerships to provide opportunities for productive private sector employment. — citation from National Alliance of Business in awarding the Peninsula Academies its 1987 Distinguished Performance Award

The academies are one of the few dropout-prevention programs that have been evaluated systematically. In California, the Peninsula Academies were evaluated for three years by the American Institutes for Research, and privately funded evaluation of newer academies has been required by the state to determine continued funding. The evidence shows that the academy model decreases dropout rates, enhances student achievement, and increases rates of postgraduation employment. Public/Private Ventures, a national group that conducts and evaluates initiatives designed to help those whose lack of education has left them unprepared for the workforce, has called the academy "the best single model in the country for business involvement in the schools." [2]

While there is considerable variation within and among sites, academy students have shown greater improvement than comparison group students in average daily attendance rates (ADA), grade point averages, number of credits earned and student employability; and in student reten-

tion and graduation rates. In Philadelphia, for example, academy students have ADA rates of over 90 percent, compared to 67 percent throughout the system. Academy dropout rates are 2 to 3 percent and graduation rates are 97 to 98 percent.[3] In Portland, the Financial Services Academy has experienced significant decreases in dropout rates, substantial increases in grades, and a steady rise in daily attendance rates and test scores. The Peninsula Academies in California enjoy a 90 percent ADA rate, compared to 75 percent for the host high schools.[4]

Academy graduates also have reported positive outcomes of the program, such as improved attitudes to school, increased self-esteem and increased faith in their ability to hold a job. Academy students have rated the preparation they received in high school more favorably than did comparison group students. As one academy graduate said, "The academy made me focus on goals; it made me start thinking about what I was going to do after I graduated."

In terms of postsecondary employment or education, academy graduates have also fared well. A 1984 survey of Peninsula Academies graduates showed that 94 percent of students surveyed were working or going to school, compared to 64 percent of the comparison group.[5] Academy students had jobs requiring more technical skills than the comparison group, and employed academy graduates were earning $60 a week more. This survey also showed that academy graduates had made long-range career plans and had sustained them well after leaving high school. In a survey of the most recent graduating class of the Business and Finance Academy in Pittsburgh, 90 percent of students were employed, in college or in the military.[6] Academy graduates in Philadelphia have employment or postsecondary education rates of 85 percent.[7]

Consistent, ongoing evaluation is a key element of any successful academy. It serves several major functions:

- It ensures accountability and focuses attention on student outcomes.
- It allows for program feedback and refinement.
- It creates credibility and fosters support, in terms of policymaking and funding, at the local level with business and the school district, and at the state and national levels.

Practitioners caution, however, that quick outcomes cannot be ex-

pected: One broker agency director said, "Look for positive outcomes to develop and increase over three to five years."

KEY FACTOR

Consistent, ongoing evaluation

Students

The program is really designed for students who have had difficulty living up to their potential. — academy lead teacher

The typical dropout is someone who is dropping out while he's still in school; he's losing grades, she's losing credits, he's getting further and further behind. Pretty soon it's just too hard to catch up. — academy teacher

The reason I was chosen for the academy was that my grades weren't too good. — academy student

The academy program is intended to serve students who are working below their potential and are therefore at risk of dropping out — at least in part because they are "unable to connect their experience in school with any realistic postgraduation employment." [8] The goal of the academies is to "capture the interest of these students before it is too late — to rekindle their enthusiasm for education" [9] by offering them a supportive school environment and reachable employment goals. Above all, an academy seeks to help students experience the connection between skills learned in school and the use of those skills in the workplace.

A number of criteria are used to determine whether a student is working below his or her potential and would benefit from the academy program:

- low academic achievement, as indicated by poor grades and low number of credits earned
- past record of irregular attendance
- evidence of low motivation and/or disinterest in school
- a gap between potential, as indicated by average or above-average test scores, and achievement as indicated by poor grades
- expressed interest in the academy's industry focus
- teacher recommendation

Criteria for entrance into an academy may vary from site to site. In most academies, for example, expressed interest in the industry focus and teacher recommendation play a role in the selection process, but in some academies, one of these factors may be given more weight than the other.

A survey of teachers in the Peninsula Academies showed that the students most likely to benefit from the academy program were those who had a history of below-average academic achievement, who had shown low interest in school, but who had "put in seat time" and had demonstrated some interest in the academy's industry focus.

In some academies, an attempt is made to have the student population consist mainly of economically disadvantaged students, while in others this may occur naturally because of the population of the host high school. In most academies the population is fairly evenly divided by gender.

While most academy students are underachievers, some academies strive for a mix of students with varying levels of proficiency, both to give less-skilled students models of success and to avoid a stigma of underachievement. In the Health Academy in Oakland Technical High School, for example, about 15 percent of the first-year class are students who are not considered at risk but who are interested in health careers. In California, academy students' abilities vary from very low to average or above-average, and this is also true of the academy population in Portland.

The dominant factor amid all these considerations for targeting academy students is that the program is especially suited to students who are working below their potential. "We're looking for that borderline student," an academy lead teacher explained, "the student who will make it with a little extra push."

HOW ARE ACADEMY STUDENTS RECRUITED?

It's not a program we have to sell. The kids know about us — the academy kids are the ones with the jobs, with the special skills, with the neat T-shirts. We have more applications than we can handle. — academy liaison

Our seniors are our best recruiters. — academy lead teacher

Academies are not magnet programs and do not draw students from throughout the district. They draw mainly from the host school. In Philadelphia, where the academy program lasts four years, beginning in the

ninth grade, academy students come from the normal feeder junior high schools for the high school in which the academy is located; in the Peninsula Academies, students are chosen from four district high schools, but the majority come from the host high school.

The selection process begins in the ninth grade (except in Philadelphia) and involves a number of factors, as mentioned above. Prospective students and their families are interviewed by academy faculty. Teacher involvement in this process ensures that students will be selected who will benefit most from the academy program. It is also important that students choose to enter the academy.

In some academies, students assist in the recruitment process. In Portland's academy, members of the student committee visit all ninth-grade English classes and make presentations about the academy. The students run meetings with nominees and their parents and serve on the team that interviews prospective students.

Practitioners have emphasized the importance of conducting the selection process in a way that raises students' self-esteem and makes them feel special, rather than as singled out for being at risk academically: "Don't make students feel like low achievers," a broker agency director, who is actively involved in recruiting academy students, advised. "Make them feel like potential high achievers. Make them feel that being in the academy is an honor."

As in many aspects of the academy program, outside advocacy is important in the recruitment of students. In some academies, community-based organizations are actively involved in the selection process, both in establishing the criteria and in interviewing prospective students. These organizations, such as the Urban League and business coalitions, such as the Business Youth Exchange in Portland, can play a vital role on behalf of the population for whom the academy model was designed. One broker agency director said:

> Make sure the standards for admission don't change when the initial funding ends and the school district takes over. You need people to advocate for the students, to make sure that the kids who get into the academy are the kids who will really benefit from it, the kids who need that extra push.

KEY FACTORS

Clear criteria for recruiting students
Strict adherence to these criteria
Teacher involvement
Avoidance of labelling
Outside advocacy
Student choice

Curriculum

The key thing is to make the curriculum relevant. The kids learn better when learning is contextualized. — academy teacher

I make the English real: 'You need to learn this because that letter you just wrote is going to Hewlett Packard.' — academy teacher

You have to know where a course lies in the spectrum — some are more academic and some are more technical, but they're all interrelated. — academy teacher

Central to the academy design is the integration of technical and academic curricula. All academies — no matter what the industry focus — infuse the curriculum with practical applications to make it relevant to the workplace and to stress the importance of certain skills for success on the job. "I have a set of applications for small business," an academy computer teacher explained, "showing how a computer would be used for inventory in the police department, in hotel reservations, in graphics."

This integration of the academic and the vocational is achieved through the active involvement of industry in curriculum design, development and revision. To develop the technical curriculum at the Peninsula Academies, for example, the curriculum committee — representatives of corporations, the broker agency, the school district (including principals and teachers from the high schools selected as academy sites and the district director of vocational education) — drew up a list of entry-level jobs in the computer and electronics industries and the specific skills required in these jobs. Based on these requirements, a curriculum was developed for each grade.

In most academies, curriculum development is a continuous process of adaptation and revision, undertaken by academy teachers in collaboration with industry representatives. In the Peninsula Academies, for exam-

ple, the academic curriculum was initially very similar to that of the host high school, except that a career education component was integrated into the academy's English classes. Gradually, as the program matured, linkages were developed between the academic courses and the computer and electronics courses. In Portland, business people are used for periodic review, revision and updating of the Financial Services curriculum. In Philadelphia, academy teachers have received stipends to revise curricula over the summer.

An academy's curriculum is interdisciplinary. In the Portland academy, for example, a unit on the stock market includes a description in the business class of how the stock market works; a section in the English class on relevant vocabulary; and a section in the math class on investing in stocks and calculating their growth over time. In another academy, a business class section on the use of the keyboard is reinforced in English class by using the word processor to revise a writing assignment, and in math class by entering a simple program on the computer.

In contrast to much traditional vocational education, which focuses on specific job skills, the academy curriculum emphasizes broad areas of competency within a given field and general enhancement of student skills. One academy electronics teacher said:

> You don't limit students to too specific tasks. You train them to be comfortable with instruments and with a range of operations so that they can transfer this knowledge to specific jobs within a given field.

An academy computer teacher said:

> You have to teach students skills that are transferable. You have to give them tools for learning, which will enable them to learn new skills on the job. Leave the specific training to the companies.

A good example of this approach is the curriculum of the Philadelphia Health Academy, which prepares students for entrance to postsecondary training in health careers. To achieve this goal, a rigorous academic curriculum has been infused with a vocational orientation. A union representative involved in helping plan the health academy asserted, "We want students with skills in science and math, not specific job skills." [10] Or, as the director of the Oakland Health Academy declared, "We don't want to train peons for the health system."

Staff of the academies use a variety of teaching strategies to maximize

student strengths: small group and individualized instruction, mastery learning, and cooperative learning. They also foster student responsibility for setting educational and employment goals. In the Peninsula Academies, students are encouraged to monitor their own academic progress and to plan actively for their postgraduation employment or education. Students also conduct a self-assessment of their employability. In the Oakland Health Academy, students are encouraged to set realistic academic goals. For example, to earn a passing grade in a particular subject, a student draws up a contract listing his or her responsibilities (attending tutorial classes, setting aside time to do homework every night) and what academy staff must do to help (frequent monitoring of performance).

In all academies, a core of courses are block-rostered: usually one technical-vocational course and three core academic courses — math, English and science or social science. In the Peninsula Academies, math, English, science, and computers or electronics are taught in the academy while social studies is taught in the host school. In the Westinghouse Business Academy, English, social studies and business are taught in academy sections while math and science are not.

All academies have strong career development programs, which include job readiness and employability skills, career planning, and techniques for interviewing, researching a company, and applying to college. These programs try to instill in students a sense that they are responsible for their education and for future work options: that they can exert control over their futures by choices they make in the present. As one lead teacher expressed it, "We try to develop in our students a sense of responsibility, cooperation and courage."

The Portland Financial Services Academy offers students a Job Exploration Program in which they respond to a series of career surveys to determine interest and then interview people working in their top three areas of interest. Some academy courses may recreate the atmosphere of the workplace, as in the Banking Simulation Course at the Business and Finance Academy where students punch in.

In all academies, the curriculum, especially the vocational components, are reinforced by many enrichment activities: field trips, outside speakers from industry, site tours of participating industries, the mentor component and the paid work experience. These activities expose students to the culture of the workplace, helping them to conquer their initial in-

timidation and to be comfortable in this setting. At one academy in the early stages, students returned from a job interview site without going inside. "We can't go in there," they said. "It's too fancy." Equally important, these activities help students grasp the practical application in the workplace of what they have learned in the classroom.

Some field trips, such as outings to plays, museums and other cultural events, may be unrelated to the academy's industry focus. In the Pittsburgh academy, for example, there have been trips to ski resorts, the ballet and a private club (sponsored by a member of the academy's executive board). The goal of such activities is to expose students to a wide range of experiences that they might otherwise not enjoy and to teach them appropriate social skills. Some academies also take students to two- and four-year colleges to help them make postgraduation education plans.

In all academies, the curriculum must meet the state requirements for graduation. Most academy graduates have therefore met the admission requirements for college — and certainly for community college. College advisement is an important aspect of the academies' program, and increasingly, academy graduates pursue postsecondary education or training.

KEY FACTORS

Integration of academic and technical curricula
Involvement of industry in curriculum development and revision
Career development
Enrichment activities reinforcing industry focus
College advisement

Support Services

"If you have expectations and they have expectations of you and that grows, these kids become more responsible. I am convinced that this really getting to know one another makes a big difference in education." — academy teacher

You have to understand who the students are, what their home situations may be like, what barriers they deal with. — academy lead teacher

You have to believe these students can succeed. — academy teacher

"Our major task," a lead teacher declared, "is to convince the students that they can make it." To achieve this goal, all academies provide students with an extensive range of supports to help them excel academically, perform successfully in the workplace and make a successful transition to postsecondary employment or education.

The key element is individual attention: academy classes are small — about twenty students per class, often five to ten students fewer than the district average. In addition, curriculum is often individualized and there is much one-on-one teaching.

Tutoring reinforces this individual attention. In some academies, a tutorial period is programmed into the school day. In the Portland academy, the last period every day is a tutorial. In Oakland, tutoring is mandatory for all students in trouble academically. This tutoring can take place after school or during "Saturday school," and peer tutors are often used.

All academies provide academic and nonacademic counseling. Some academies have guidance counselors, and sometimes staff members of a collaborating community-based agency counsel students. In Portland, for example, counseling and tutorial services are offered to academy students

in the Whitney North Young Center, run by the local Urban League. However, most counseling in an academy is undertaken by the teaching staff. The teacher/counselor helps students plan their academic careers and postgraduate work or education, monitors their academic progress towards graduation, helps with study skills, provides motivational support, and helps with academic and personal problems.

All academies provide students with motivational awards and activities, highlighting student achievement, such as student-of-the-month certificates, awards for perfect attendance, and others. In Portland, there is a point system where students can gain points and win "Academy Awards" in a number of ways, both academic and nonacademic: daily attendance; punctuality; bringing an adult or parent to a special event; visiting a college; meeting with a counselor; working on the student committee; attending tutoring session. Incentive awards include luncheons, movie days, binders with the academy logo, academy jackets and business cards. In Pittsburgh, there are financial incentives: $10 for perfect attendance, $15 for being on the honor roll. The money is banked and given to the student at graduation. These awards are often donated by industry.

Whatever the actual awards, practitioners agree that these incentives play an important role in student success. One academy liaison said:

> Of all the things we do in the academy, I think the awards and the recognition of student achievement are the most important. We identify kids who are doing something right. In regular school, we mostly wait for them to do something wrong.

THE ACADEMY AS FAMILY

When her father left without saying a word, I think it was the academy that helped her pull through. It was like another family to her. — academy parent

We are the students' support group. — academy lead teacher

One of the most frequent observations about the academies is that they are like family — to students and teachers alike. Many activities foster this sense: orientation events; picnics and barbecues for returning students, teachers, parents, and mentors; mentor luncheons and open houses; displays on the school bulletin board and at host school events; an academy page in the school yearbook; holiday parties; and an end-of-the-year pot-

luck dinner. Academies have their own student governments and newsletters. The latter often feature interviews with former students currently working. Former students also address classes about their postgraduation work and education.

Perhaps the most important academy event is its graduation, which students attend in addition to that of the regular host high school. The academy graduation usually takes place at an industry site with a guest speaker from industry and is attended by members of the academy's executive board, mentors, representatives from industry and the broker agency, staff and families. All graduates receive certificates of completion, and many special awards are given out, such as most improved student, best all-round student, and best student in each subject area for all grade levels. The academy graduation is the culmination of the year, a symbol to faculty and students of the academy's uniqueness. As one academy lead teacher described it, "When I walked into the first academy graduation, I knew that I had helped create something very special."

Parents and families are very involved in academy activities. Typically, parents are kept much more informed of their children's progress and of academy events than is usually the case in regular school. Contact is personal, not by letter. In the Westinghouse academy, a parent coordinator — a parent of a former academy student — keeps parents informed, holds monthly meetings and compiles information for a monthly newsletter.

All academies have supportive school climates where high expectations are set for students. "You have to have high expectations of students," a lead teacher asserted, "and you have to give them strong, consistent support to achieve them. What these students need is 'tough love'." Within this supportive and structured environment, students are encouraged to be active learners and to assume responsibility for what they learn. "Once you enter the academy," another lead teacher agreed, "you're making a choice to be educated. You have to perform to stay in."

KEY FACTORS

Motivational awards and activities
High expectations of students
Consistent support and individual attention
Personal contact with families

The Mentor Program

The mentor component of the program provides the student with a positive role model — and many of them have never had this. It gives them another supportive adult in their lives and one not related to school. — academy lead teacher

The student gains a perspective on work that he/she simply cannot get without knowing this professional. — mentor

What a mentor can give a kid is a lot. They need people who are out there; they need to understand what they've got to look forward to. — academy student

The mentor program pairs academy juniors with employees of participating industries, based on a number of criteria, including career interests, hobbies and personalities. The mentor serves as a role model for the student, and as a "friend in industry," making what the student learns in school relevant to the demands of the workplace.

Typical mentor/student activities include:

- mentor attending academy classes
- student "shadowing" mentor at work for a day
- mentor and student discussing course material or working on particular projects
- mentor and student discussing potential careers and postsecondary education and visiting colleges
- mentor helping student to prepare for job interviews and to prepare a resumé
- mentor and student attending academy events, jobs fairs, and sporting and cultural events

Mentors can play a vital role in encouraging students to continue their education and to set high educational and noneducational goals: "The mentor can give kids an incentive to stay in school — they can see the payoff," one mentor said. An academy student described his mentor as "the

person who convinced me to keep furthering my education. He is the one who pushed me to reach my goals in life."

Above all, mentors are friends. An academy student stated:

> My mentor is the kind of person who cares about the minds of the young people of today. He is always there when I have a problem, whether about school or something personal. He will always take time to help me or give me advice.

The mentor component may be the responsibility of the lead teacher, another staff member, or a task force or committee, consisting of representatives from the academy, participating industry and the broker agency. Managing this component entails recruiting mentors from participating business and industry; giving them a thorough orientation to the academy and its students; helping students and mentors form good relationships; maintaining frequent contact with mentors about student progress; and monitoring the program.

Most academies host activities to help students, families and mentors become acquainted: brunches and open houses early in the academic year and mentor luncheons throughout the year. Mentors are encouraged to visit the academy and to attend special events with students and their families. In some academies, mentors meet regularly to share their experiences.

Mentors speak enthusiastically about the rewards of being a mentor:

> Being a mentor gives me a feeling of accomplishment — of personal elation — like having taken a few steps up the mountain and looking back.

> Being a mentor is an opportunity to learn about the world again from a different set of eyes. It's an opportunity to learn more about yourself. It's an opportunity to share what you know with someone who really needs that information.

KEY FACTORS

Orientation for prospective mentors to academy program
Frequent communication between staff and mentors about students

The Work Component

If we just said to students 'You have to be on time, you have to attend,' many of the students wouldn't change their patterns. But if we say 'If you attend, if you're on time, we will put you in positions where you can work' — once they buy into that, they bring about the changes in themselves. Work is the carrot we use to get the results we want. If we can offer them that, they'll stay in school, they'll be on time, their skills will improve. But we need to be able to offer them that job. — academy lead teacher

Having that job made me feel excellent. It made me feel so high up there — like 'Look what I've accomplished, look what I've achieved.' — academy student

The work was the best part. That was the only way you could understand what the text was saying. — academy student

The work experience is central to the academy program: "For most youth, the chance to obtain a job is the major academy incentive; jobs are used by the teachers as lures and rewards." [11] These jobs allow students to apply skills and knowledge learned in the classroom to a work setting.

Students are placed in a range of jobs. Students in the Portland and Pittsburgh academies are placed in banks, savings and loan institutions, accounting firms and insurance companies, doing data entry and word processing. Peninsula Academy students are placed in various local companies — entering data, operating switchboards, word processing, repairing equipment, assembling mainframes, writing basic programs. In Pittsburgh, some academy students also work in the Mellon Backroom Operation, a mail facility situated next to the Business and Finance Academy.

There are many advantages of the paid work experience. Most important, it exposes students to the variety of job opportunities in their vocational field. It also introduces students to the culture of the workplace (dress, language and behavior) and to its expectations (punctuality, respon-

sibility and cooperation). Clearly, the success of the academy program springs in large part from the self-confidence students gain from the work experience and from the incentive it gives them to continue their education. Academy students testify to this:

> The company could get college students in here to do the jobs we're doing but they let high school students hone their skills and open the door for kids who really need a chance to get work experience. [12]

> Working on that job really made me understand how important it was to stay in school.

Students typically must qualify or *earn* a job — usually by successfully completing two years in the academy, being recommended by their teachers, and in some cases, earning career development credits.

Work placement practices vary. Peninsula Academies students may work full-time during the summer after their junior year and half-time in the second semester of their senior year. In Portland, students work in the summer after their junior year but do not work during senior year. Students in the Philadelphia academies work mainly during the summers.

Job counseling is a vital part of the work experience component. Every effort is made to place students in jobs that are closely related to their career interests. Academy staff maintain close contact with industry about the kinds of jobs available and choose students who are best qualified for particular positions. With help from their teachers and mentors, students apply for these jobs as they would in the open market by submitting resumés and being interviewed. Mentors sometimes accompany students on job interviews to acquaint them with the surroundings. Students are paid the industry rate for the job and earn school credits for their work.

Students receive close supervision in their job placements and there is frequent communication between job supervisors and academy staff. Supervisors have generally ranked students highly. "They were so impressed with the students from the academies," one mentor said, "that they created another one or two positions." An industry representative remarked, "I don't think there's much risk involved in hiring these kids. They come highly recommended and they're usually supervised one to one."

Like the mentor component, the work component requires continual contact between the school and participating industry. Typically, one academy teacher — often the lead teacher — is in charge of coordinating the

work component. He or she arranges site visits, secures job placements, evaluates students' work, and maintains contact with supervisors. In some academies, as in Portland, the broker agency is involved in recruiting mentors and securing job placements for students.

Practitioners recommend the cultivation of networks of contacts in industry to maintain both the mentor and the work experience components. "You can't rely on just one contact person per company," one lead teacher observed. "You have to develop networks of support so that if your contact leaves, you don't have to start all over again. Industry is not static."

After graduation, many students work in entry-level jobs for which the academy trained them. Others pursue higher education or more technical training, some while working part-time. (As many as 75 percent of Peninsula Academies' graduates pursue further education or training after high school.)[15] Some of these latter students may return to work in a particular field at a higher level than that for which the academy trained them. Thus, while the work experience component may not be a direct route to placement in an entry-level position in a participating industry, for many practitioners, the academy work component is a means of attracting students, keeping them in school and rekindling their interest in further education and career planning. A broker agency described it as follows:

> The job is a vehicle. We don't expect that the majority of kids who go through the academies are going to end up in financial services industry jobs long-term. We don't want to lock a youngster into one particular job. It's a vehicle for keeping the kids in school and for teaching them tools for learning.

KEY FACTORS

Job placement counseling
Close supervision of students on the job
Frequent contact between staff and job supervisor
Networks of support in industry to maintain work and mentor components

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School/Industry Collaborations

Go to business for what is unique to business — not money first and foremost. You need the involvement of people. What does that bank have that you can't get anywhere else? You need jobs, you need mentors, you need advocates for the program outside the school system, you need help on the curriculum. — broker agency director

We are corporate citizens. We have a responsibility for affirmative action and for providing economic opportunity. — industry representative

You're giving someone a chance to learn and to better themselves. I mean what is it if you can't give a teenager a chance to get off the streets, to get away from the drugs and the violence? — academy student

At the core of the high school academies are active, ongoing and dynamic partnerships between industry and the schools. Industry must be involved in every aspect of an academy: the design, the implementation and the daily operations. Several major companies and numerous smaller companies, including Lockheed, Hewlett-Packard, Tandem and Xerox, have helped support the Peninsula Academies. In Pittsburgh, six banks, including Mellon, have been active in the Westinghouse academy, and in Portland, over fifty companies — many of them financial services institutions — have been involved, fifteen to twenty of them at any one time. Nor is it only business and industry that have become involved. The Health Academies in Oakland and Philadelphia enjoy the support of public and private hospitals, medical centers, and local unions.

Industry personnel participate in the academies in numerous important ways: as members of the governing bodies; as policy makers, fund raisers, and curriculum developers and reviewers; as job supervisors and employers of graduates; as guest speakers at academy events, hosts of field trips, and as mentors. Industry personnel can give the academy visibility

and prestige. They can make presentations about the academy, elicit district support and resources from other industries, and help with special projects. These kinds of support are even more important than financial support. As an Urban League education director who is actively involved in eliciting industry support for an academy stated: "I say to business, 'I'm not after your money. I just want your cooperation.'"

Industry can also make many in-kind contributions to the academy, including donations of equipment and the use of industry facilities for meetings, graduations and the production of promotional materials. For example, Hewlett-Packard made a video for the Peninsula Academies about their mentor program to help them elicit industry support.

Companies have become involved in an academy for a variety of reasons. Chief among these are the need to train workers for employment in entry-level jobs and concern for their communities, especially for the youth of their communities. "Companies owe something to the youth of America," an industry representative asserted. To maintain the active involvement of industry, practitioners emphasize the importance of keeping industry personnel in as much direct contact with the students and staff as possible. "You have to find," another industry representative stated, "the most effective roles that industry can play in direct contact with the students and staff to have the most direct impact on the academy." This contact keeps industry personnel focused on the needs of the students and gives them a feeling of satisfaction. A broker agency observed:

> Companies stay involved because the partnership gives them something that they can't get elsewhere: the contact with the youth, the feeling of being involved, of doing something to help the community and to help themselves. It's just like a successful marriage: what you get out of it has to be worth what you put in.

Academies must neither involve too many businesses nor too few. More important, jobs in these companies must have possibilities for advancement and the skills learned in these jobs must be transferable. "We're not training these kids for dead-end jobs," one academy teacher remarked. "We're giving them skills that are transferable." A student acknowledged his appreciation of his academy as follows:

> I'm eighteen and I've had three jobs — all of them at major companies. I've never tossed a fry or slapped a burger and thanks to the academy, I won't have to.

THE BROKER AGENCY

Such third party organizations . . . are invaluable participants in partnerships because of their expertise in communication and in efficient program design and implementation. Sometimes, business and schools find that the differences between them are so great that they overwhelm any incentives to collaborate. . . . These processes can be greatly aided by a linking organization whose raison d'être is to draw together the public and private sectors to achieve a common mission."[14]

Broker agencies have played a central role in the development of the academies. The Stanford Mid-Peninsula Urban Coalition helped establish the Peninsula Academies, acting as liaison with industry and the schools, and as a fund raiser and channel for foundation funds. In Pittsburgh, the Urban League and the Allegheny Conference on Community Development were the broker agencies that managed the foundation funding and fostered the link with industry. The broker agencies in Portland were the Urban League, the recipient of the initial grant from the Edwin McConnell Clark Foundation and the Business Youth Exchange, an arm of the Portland Chamber of Commerce, subcontracted by the Urban League to elicit industry involvement and resources.

To be an effective partner in the establishment of an academy, a broker agency must have certain characteristics:

- knowledge of the community's existing youth employment programs
- widespread contacts, especially in the business, education, and minority communities
- knowledge of the local political context and the ability to operate effectively within it
- the ability to obtain local resources for the program, including foundation funding, corporate support, equipment and volunteers
- strong organizational and managerial skills
- an established reputation in coordinating programs

A broker agency's major tasks are to:

- obtain foundation support to start an academy and to manage this initial funding
- solicit and facilitate industry support
- oversee the hiring of the academy director/lead teacher
- assist with student selection

help coordinate the mentor and work components of the program
assist in program and curriculum development

The role of the broker agency — and of the three major partners in the collaboration — is evolutionary, with the responsibilities of the partners changing as an academy is established and institutionalized. In the early years of an academy, the broker is often the major player, while school and industry play secondary roles. In the intermediate stage, the roles of the school and industry have grown and that of the broker agency has diminished. In the late stages with an established academy, the broker agency plays a much less prominent role, and may phase out altogether. Some agencies continue their support indefinitely, as in Portland where the Urban League and the Business Youth Exchange are active members of the academy's advisory board. In this later stage, if the original broker ceases to be involved, schools and industry must develop ways of working together on their own.

In the California academy replications, there is no broker agency. The state gives funds to the school district, which must work out its own relationship with industry. This is a significant variation on the original academy model to which the broker was considered vital. The experience of the California replications suggests that, especially in the initial stages of an academy, the involvement of a group whose major function is to elicit industry support and that has experience facilitating partnerships, is clearly an advantage.

THE PROBLEMS OF COLLABORATIONS

The initial stage of any partnership is distrust. You can work through this by keeping focused on common goals. — broker agency director

Partnerships work when all partners get something they can't get anywhere else. When the gains are fuzzy, there are problems. — broker agency director

The academy program involves the schools, industry, and the broker agencies in untraditional cross-sector partnerships. Any collaboration has problems, especially in the early stages. Chief among these are questions of turf and power sharing: in a given situation, which partner has the power to make decisions? Problems arise when all partners do not respect the rights and powers of other partners.

Outside control can also cause problems in collaborations. If the funding agency attempts to exert control over program design or implementation or over the nature of the partnership, for example, problems will arise. "Outside money is good . . . and gives the broker agency leverage," a broker agency representative stated, "but it also can come with strings." The restraints placed on partners by the commitments and needs of other partners can also become an issue. "It's no good," an industry representative noted, "if the collaboration is driven by desire for publicity on the part of one of the partners."

Collaborations, especially those involving partners from different sectors, will also encounter problems of communication and coordination especially in the early stages as partners adjust to new ways of communicating and working, and as collaborators grope toward a definition of objectives that all can accept. "School people and business people don't speak the same language," an academy teacher explained, "and even when they do, they can mean different things."

Various strategies have been developed to overcome these problems of collaboration. Chief among these is the developing and sustaining of a strong sense of ownership of the academy on the part of all the collaborators. This can be achieved in a number of ways:

> involving representatives of all partners in early planning of the academy
>
> including representatives of all the partners on the academy governing body
>
> keeping all partners involved in the academy's daily operations: involving them in student selection and curriculum revision; inviting them to academy events and classes; and keeping them in close contact with students

Another strategy for avoiding some of the problems of collaboration is to have written agreements carefully delineating roles and responsibilities of partners. These agreements should establish high expectations of the active role each partner will play in the academy. In the Portland academy, there is also a written mediation process for solving disputes that a disinterested third party puts into effect when the need arises.

Maintaining an effective partnership is a continuing process. As one broker agency director puts it:

> You have to keep selling the partnership — reminding people of what they're getting from it. One way of doing this is to keep partners focused on their common goal — the good of the students. The kids sell the program.

KEY FACTORS

Recognition of the collaboration's evolutionary nature
Development of a strong sense of ownership in all members of the collaboration
High expectations of partners
Written agreements outlining responsibilities of partners

Organization

Academies are three-year schools-within-schools for approximately one hundred students. They have their own classrooms but are situated within high schools — the host schools. The number of hours that students spend in academy classes varies from academy to academy, and from year to year within each academy. In the Peninsula Academies, for example, the only academy requirements during senior year are a lab course in electronics or computers and the spring semester work experience.

This structure — part in the academy and part in the host school — helps students feel part of both the smaller and larger group. It fosters a close supportive environment but also guards against isolation and elitism.

Every academy has an external governing body — a board of directors, executive committee, advisory board, or steering committee. This body includes representatives of supporting industries, the broker agency, and the school district — the superintendent and/or director of vocational education. Also included are the director/lead teacher of the academy, the principal of the host school and/or the liaison between the principal and the academy — sometimes a vice-principal of the host high school. The principal of the host high school may or may not be involved with the academy on a daily basis, but his or her active support is crucial, both to block schedule academy students and to secure assistance and resources from the district.

The degree of involvement of the governing board in the operation of an academy varies. Some meet monthly to discuss policy issues; develop and revise curriculum; oversee academy operations; and generate funds for special events, awards, and equipment. Some academies have both an executive board, which meets less frequently and which generates support for the academy and gives it visibility; and a steering committee, which focuses on the academy's daily operations, in particular on the mentor and work components and on curriculum revision. The Portland Financial Services Academy has an active advisory board, which plays a dual role of

executive board/steering committee, and includes representatives of the academy, the school district, the broker agencies and involved industries.

Periodically, and especially in the initial phases of an academy, task forces with representatives of all partners are established to address issues such as scheduling, equipment, student selection, curriculum, and the mentor and work experience components. Sometimes, student and parent advisory committees assist in this work.

A director or lead teacher has the major responsibility for managing an academy. His/her role is essential, both to oversee daily operations and in linking all the partners. Typically, the director/lead teacher teaches half-time and administers half-time. In the Peninsula Academies, the lead teacher for the Computer Academy teaches four classes and is paid for two extra hours of administration. His tasks include conducting staff meetings, academic counseling, fund raising, organizing special events, tutoring, and managing the mentor and work components.

All academy teachers assume extra responsibilities for academy operations. These responsibilities include student selection, curriculum development, maintaining contacts with industry, overseeing job placements, and providing student support services and career counseling. In return for this added work, teachers receive a reduced teaching load (four courses rather than five) and an extra preparation period a day — ideally a common period with other teachers for joint planning. While the director/lead teacher and key staff are school-based, they are responsible to the advisory board and must maintain contact with this body by regular attendance at board meetings.

CONTACT WITH THE HOST SCHOOL

The academy director/lead teacher and staff maintain close contact with the host high school, both to ensure its support of the academy and to avoid competition. It is especially important that union representatives and teachers in the host school understand the extra responsibilities that academy teachers carry so that they do not feel that academy teachers receive special treatment. Frequent communication through attendance at department meetings in the host school, presentations at faculty meetings, and publicizing the academy in the school newspaper and yearbook can help promote this understanding and ensure support.

In cities where there are several academies, organizations have been

formed to carry out activities in common — such as fund raising and eliciting business support — to avoid competition for funds, mentors, and work placements. The Philadelphia High School Academies Association, for example, carries out joint fund raising and other management activities that academies previously undertook individually.

KEY FACTORS

Strong lead teacher
Active steering committee/advisory board
Frequent contact with host school

Staffing

People make the program. You've got to have committed staff. — academy lead teacher

We're looking for that special combination — a teacher who can provide the structure and the supports the students need, who really believes that they can succeed and who will become part of the team. — academy lead teacher

Each academy has a core staff of five to ten teachers and counselors, some full-time and some part-time. All academy directors and teachers speak of the necessity of having staff dedicated to the premise — central to the academy philosophy — that all students can succeed. "You need teachers," an academy lead teacher declared, "who believe these kids can learn, who believe they can be scholars." Staff must also be committed to the academy's interdisciplinary and team-teaching approaches. "You need teachers who want to be involved in a team," he continued, "who want to be involved in developing curriculum." Ideally, academy teachers must assume ownership of the program and be willing to accept responsibility for the success or failure of their students. They must also assume responsibility for the extra work of developing curricula, maintaining links with industry, and providing students with the full range of academy supports. "You need teachers who are willing to take risks," an academy teacher asserted, "who are willing to take on new roles and responsibilities."

Academy staff are usually recruited from the teachers of the host school and sometimes from elsewhere in the district, depending on contract restrictions. Prospective teachers are interviewed by the director/lead teacher, the high school principal and/or the academy liaison. Experience has shown that volition is an important element in securing a dedicated faculty: teachers must choose to teach in an academy. One academy experienced enormous staff turnover in its initial phase because, the lead teacher explained, "The district insisted on appointing staff. We had teachers who just didn't want to be here."

WHAT ARE THE REWARDS OF TEACHING IN AN ACADEMY?

It's a unique opportunity to see if you can really make a difference for a kid. — academy teacher

While teaching in an academy involves new roles and responsibilities, the rewards are many. These include reduced class size and teaching load; involvement in the development of an innovative program; increased contact with students and families; opportunities to develop curricula and interdisciplinary approaches; and the camaraderie that comes with working with a small, closely knit group. Many academy staff speak of the transformation they experienced teaching in an academy and of the opportunity it provided to renew themselves as professionals.

STAFF DEVELOPMENT

Staff development is crucial — both in the early stages of an academy and ongoing. — academy lead teacher

Staff development, both initial and ongoing, is a vital component of the academy program. New staff must be given a full introduction to all aspects of the academy: its philosophy and organization, the students, the integrated curriculum, student support services, private sector involvement, the mentor and work components, and parental involvement. Some academies sponsor end-of-the-summer retreats for returning — and new — faculty. (Most successful academies have very low rates of staff turnover and consequently not many new teachers to train.) Much staff development is carried out by academy staff or by staff from other academies.

Staff orientation on the academy's industry focus is also necessary: the requirements of specific jobs; obtaining business speakers; arranging field trips to industry sites; working with mentors. This staff development can be conducted on site by industry representatives.

Ongoing staff development is vital, both to familiarize staff with innovative teaching techniques and to support them in their nontraditional roles. Training has included mastery learning, cooperative learning, and writing-across-the-curriculum — methods particularly appropriate for the academy program. In addition, staff need training in numerous areas rel-

evant to the academy program: teaching at-risk, often poorly motivated students; developing a supportive and disciplined classroom atmosphere; using effective motivational activities and student feedback systems; involving parents; developing counselor support and using peer counseling; and developing strategies for maximizing student strengths, such as student contracts and "plans for success."

Some academy staff may also need in-service training to help them identify those aspects of their teaching style that undermine student success. Whether consciously or unconsciously, many teachers, especially those who have taught in inner-city schools, have low expectations of students. These expectations may be expressed in ways that teachers themselves do not recognize, such as tone, language and body movement. In some academies, such as the Oakland Health Academy, in-service has helped teachers become aware of these hidden negative messages and helped them change these expectations, enabling them to convey more positive messages to students.

In addition to this formal staff development, much staff learning takes place informally during the common prep period where teachers can work on integrating their curricula. Formal workshops can also take place during this time. In Portland, for example, staff have used the common prep for presentations by experts from the financial services field, for multi-cultural education workshops, and for drug- and alcohol-abuse training sessions.

Optimally, staff development brings staff together and supports them in their work, fostering the feeling of camaraderie and of family that is essential to the program's effectiveness. In the Oakland Health Academy, many staff development sessions are followed by a potluck dinner. As the lead teacher noted: "You have to keep things human."

KEY FACTORS

Core of dedicated staff who choose to teach in an academy
Pattern of extra responsibilities that teachers must assume
Ongoing staff development
Common prep period

Cost

We can change the dropout rates significantly — and that in turn saves the taxpayer money. If that dropout were to go to the juvenile hall, it would cost about $15,000.
— academy lead teacher

The major costs to a school district of operating an academy are in staff salaries because of reduced class size and teaching load. (If an academy employed five teachers, the reduced teaching load would entail one extra full-time teaching position.) Expense is also involved in space and materials, especially if a room must be outfitted with electronic and computer equipment. Some of this expense — salaries of the academy lead teacher and equipment — may be covered by a foundation grant and/or industry contribution. The Peninsula Academies and the academies in Portland and Pittsburgh all had initial foundation support for planning and implementation.

Overall, the cost per academy student is higher than the per student cost in regular high schools. In 1985-86, the average added cost per pupil for students in the Philadelphia academies was $490.[15] Each California academy receives a state grant of up to $67,500, calculated on a performance-based formula, making the added annual per student cost for an established academy approximately $750.[16] Although the costs of establishing and running an academy are not slight, the academy attracts valuable resources from industry — equipment and in-kind services — that would not otherwise be available to the school district. Furthermore, practitioners and evaluators point out that the costs of an academy should ultimately be considered in comparison to the costs of the possible alternatives — students dropping out of school and being unemployed.

These costs are both direct — lost income and sales taxes, and indirect — the social service costs, in terms of AFDC, Medicaid, youth employment services, and crime. A New York study by Interface estimated that for every

1,000 youth put to work, the city would save $1,200 per youth in the first year, taking into account income and sales tax revenues and money saved on AFDC benefits for those young people and their children.[17] A study in Los Angeles estimated the lifetime costs of lost federal, state and local taxes and additional societal costs as approximately $71,000 per youth.[18]

More directly, academies can save school districts funds in the form of per student reimbursement from the state. On average, the California academies reduced the dropout rate from 14 percent to 7 percent over three years for the first group of students entering the program. In an academy with one hundred students, this reduction translates to an average of seven students per year per school or twenty-one per school across three years. With ADA reimbursement at $3,700, a high school with an academy saves approximately $78,000 per year.[19]

These estimates are very rough, serving only to emphasize a fundamental point: the added cost of educating an academy student is far less than many of the expenses entailed if that student drops out of school and/or spends a significant part of his or her adult life unemployed. Educators who are aware of the academy model are convinced of its effectiveness in dropout prevention. The Philadelphia superintendent of schools, for example, plans to expand the academy program to serve up to 5,000 students.[20] Furthermore, given the evidence of the effects of poverty on the educational experience of children, an academy could have a significant impact on at least two generations.

Academy staff and supporters speak movingly of the long-term benefits of the program and of the vital role that the academy plays in helping families break cycles of poverty. Many academy students are the first in their family to graduate from high school and certainly to attend college. They do so with marketable skills, enhanced self-esteem, and positive attitudes about school and work.

KEY FACTORS

Promotion of academies as less costly than the alternatives

Conclusion

The high school academies represent a many-faceted approach to linking business/industry and the schools, involving a successful combination of school-based changes and outside interventions that are sustained over time. The academy is a highly adaptable model, suited to a variety of situations and worthy of implementation by school districts concerned about at-risk youth. At this point, based on the experiences of academies in Philadelphia, California, Portland, and Pittsburgh, a wealth of knowledge exists about establishing an academy successfully. A chief concern is careful selection of the school site — especially in terms of the principal's commitment to the academy, given the work involved in fitting the academy into the high school structure and in changing the schedule to block-roster students and to provide teachers with common prep periods.

Careful selection of industry focus is also important. This focus cannot be chosen simply because a particular company or industry is willing to sponsor an academy. The industry focus must be dictated by the needs of the local labor market and the jobs in this industry must be jobs with a future. Lead time is another important element in the development of an academy. It took two years of planning for the Peninsula Academies; more recent adaptations have taken a year. (See Appendix 2 for the chart, Twelve Essential Replication Tasks, as outlined in *The Replication Guide for the Peninsula Academies*.)

Beyond these three considerations, the experience of newer academies, and, in particular, of the California replications, which have been closely monitored, has suggested that "careful implementation and adherence to certain central features of the model are necessary."[21] Of the original ten replications in California, those sites that most carefully implemented the model showed the greatest impact on student performance. These features that define the model and ensure success are:[22]

Strict Adherence to the Academy Model
including block-rostering, team teaching, common prep for teachers and the mentor and work experience components.

A Defined Student Selection Process
that results in the enrollment of potentially successful, at-risk youth and that avoids labelling and enhances student self-esteem.

An Integrated Academic-Technical Curriculum
emphasizing broad areas of competency and teaching students skills that are transferable.

Strong Private Sector Support
including involvement in a governing body so that decision-making is conducted jointly by educators and industry representatives; participation by industry in the development and revision of the technical curriculum; and support for certain other features of the program — mentors, jobs, field trips, speakers.

A Strong Career Planning Component
of the curricula, emphasizing student employability and job readiness skills.

A Full Range of Student Support Services
including counseling, tutoring and a pattern of motivational activities and awards.

A High Degree of Commitment
at the district level so that academy teachers have sufficient time to plan and to ensure adequate equipment and supplies.

Identifiable Academy Space
with a number of homerooms and labs dedicated solely to academy classes.

The provision of technical assistance from practitioners is highly recommended to any school district seeking to establish an academy. There are many areas in which such technical assistance would be vital:

Academy Organization
fitting the academy into the high school structure; block scheduling; handling the budget; and developing leadership and support among teachers and administrators.

Curriculum
developing an integrated academic-technical curriculum; obtaining private sector input into the curriculum; conducting staff development; and creating esprit de corps among academy staff.

Private Sector Involvement
developing private sector support for the mentor and work experience components.

Public Relations
building the program's credibility; avoiding negative stereotypes associated with the academy's student population; dealing with the media; and conducting evaluation.

Experience suggests strongly that these factors are essential for academy success. Yet, even more important is the conviction on the part of all involved in an academy that academy students, facing many barriers to achievement, can succeed academically and in the workplace. At the heart of an academy are dedicated teachers, youth advocates, and industry representatives who want to participate and who believe in the academy program and its students.

NOTES

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Twelve Essential Replication Tasks

The following chart outlines the tasks of replication with a suggested time frame based on a year's lead time. See the *Replication Guide for the Peninsula Academies*, listed in the bibliography, for a detailed discussion of these steps.

Tasks	Responsible Parties	Schedule by month
Determine local need, interest, and support within schools, companies, broker agency	Schools, industry, broker	September, October
Obtain first approval: hold meeting of school board, school administration, industry, broker to decide whether to proceed	School board, Schools, broker, industry	November
Assign or hire staff	Broker, schools	November and February-May
Obtain preliminary corporate commitments	Broker, industry	November-May
Establish a governing structure	Schools, industry, broker	November
Obtain financial support for start-up tasks	Broker, schools	November-February
Develop the curriculum	Schools, industry, broker	November and ongoing

Assess progress, make final decision to implement program	Schools, industry, broker, school board	February
Identify/select students	Schools	March-May
Prepare classroom space	Schools	May-September
Coordinate program with other activities	Schools	May-June
Obtain ongoing corporate support	Broker, industry	June-September

Academy Contact People

The following individuals have been involved in the academies as teachers, evaluators, industry representatives and broker agency directors. They have expressed their willingness to share their experiences with individuals, schools and school districts interested in establishing an academy.

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High School Academies

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Banning Academy of Science & Electronics (BASE)
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101 East Nicolet
Banning, CA 92220
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The Academy
Center High School
Center Unified School District
8306 Watt Avenue
Elverta, CA 95626
916-344-4341
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Health Careers Academy
Coalinga High School
Coalinga-Huron Unified School District
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Coalinga, CA 93210
209-935-0892 ext. 201 or 177
Contact: Pat Smith, Director

The Academy
Concord High School
Mt. Diablo Unified School District
4200 Concord Boulevard
Concord, CA 94521
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Computers/Electronics Academy
Elk Grove High School
Elk Grove Unified School District
9800 Elk Grove-Florin
Elk Grove, CA 95624
916-686-7741
Contact: Beverlyn Draper, Director

Computer Repair/Word Processing
Inglewood High School
Inglewood High School District
231 S. Grevillea Avenue
Inglewood, CA 90301
213-419-2597
Contact: Sandra J. Chefney, Program Coordinator

Computer Academy
Fremont High School
Los Angeles Unified School District
7676 S. Pedro Street
Los Angeles, CA 90003
213-758-4141
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Livingston Agri-Business Academy
Livingston High School
Merced Unified School District
1617 Third Street
Livingston, CA 95334
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Computers/Business Academy
Live Oak High School
Morgan Hill Unified School District
1505 E. Main Avenue
Morgan Hill, Ca 95037
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Computech Academy
Mountain View High School
Mountain View-Los Altos Union HS District
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The Automotive & Mechanical Science Academy

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The Electrical Academies

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The Academy for Educational Development (AED)

is an international, not-for-profit planning and consulting organization with offices in Washington, D.C. and New York City. Founded in 1961 to help U.S. educational institutions develop long-term educational, administrative and financial plans, AED now works in 83 countries in education; communication and information development; telecommunications; health/nutrition; agriculture and population; cultural exchange; vocational and technical training; energy management; and the arts.

The School and Community Services (SCS) Division has a strong commitment to excellence and equity in education and to developing links between schools and community agencies that increase educational and development opportunities for at-risk youth across the United States. Staff and consultants have extensive experience working with large, urban school systems; community organizations; and foundations and other funding agencies on programs that address critical educational issues such as dropout prevention, adolescent pregnancy and parenting, literacy, and youth employment and training in twenty-five states and over seventy-five cities.